

The remaining experiments were made with the phosphate of soda, to observe if the phosphoric acid of this salt might behave in the same way as the sulphuric acid of the sulphate. The experiments were only two in number, in one of which the cat was killed after one hour, and in the other at the end of two hours. In both the quantity of phosphoric acid recovered from the alimentary canal and its contents was large, and did not exhibit any evidence of the same primary rapid absorption as of the sulphuric acid. The phosphoric acid was, however, more reduced in quantity than the base, and it is probable that, to a certain extent, the phosphate undergoes decomposition in the canal.

How the splitting-up of the sulphates in the intestines is effected, and in what combination the acid passes into the blood, is beyond the scope of the present communication.—*Brit. Med. Journ.*, Dec. 16, 1882.

#### Transfusion.

The question of the treatment of cases of excessive loss of blood by means of injections of alkaline solutions of common salt must be held to be well worthy of consideration. Schwarz wrote on the subject in 1881, recommending this method of treatment as a safe and rapid means of saving life, and a review of his book will be found in our pages for December 17, 1881; and he has since made a further contribution to the subject (*Berliner Klinische Wochenschrift*, 1882, No. 35); and in the *Deutsche Medicinal-Zeitung*, No. 46, is an abstract of two cases by Kümmell. The advantages that a simple non-coagulable and easily prepared fluid possesses over even defibrinated blood cannot be too highly estimated: and if, as is maintained, the real want of patients suffering from acute anæmia is not so much blood-disks as blood-pressure, the employment of an ordinary salt solution presents an easily prepared agent ready to hand in all emergencies. It is obvious, however, that a trustworthy conclusion as to the value of the proposed remedy can only be arrived at by its practical employment. Schwarz recommends intravenous injection of the fluid as in ordinary blood-transfusion. In both Kümmell's cases the solution was thrown into the radial artery—i. e., the intra-arterial method of Bischoff. In the first example the transfusion was resorted to for hemorrhage after the operation of nephrectomy; a 6 per cent. solution of chloride of sodium made alkaline by a few drops of caustic soda was injected to the amount of about 160 grammes, at a temperature of about 40° C., and at a pressure of about one metre. The immediate effect was recovery from the collapsed condition, but the patient died the next day in consequence of disease of the other kidney. In the other case, in which the operation was performed on account of acute anæmia due to hemorrhage from a resected knee, about 500 grammes were introduced, the pressure not being measured. The heart was in a weak state. The general effect was all that could be desired, but a swelling in the hand was noted, which was no doubt due to rupture of capillaries by the force of the injection; this swelling diminished, but gangrene of the hand set in, which necessitated amputation of the forearm. In the part cut off, thrombosis of the ulnar artery was found. The mummification was attributed to the combined action of the high pressure at which the fluid was injected, and the cardiac debility, aided by the anatomical arrangement of the vessels in the hand. The author comes to the conclusion that it is better to open the median basilic vein than to use the intra-arterial method. There seems to be some ground for believing that intra-venous injections of solutions of common salt, properly performed, have been occasionally of real life-saving value: or, at least, that enough encouragement has been met with to justify a more extensive trial of this method of treatment.

In the same number of the *Deutsche Med. Zeitung* an abstract of some remarkable observations by Giulio Dozzi is given. Two cases are mentioned in which blood was transfused into the cavity of the peritoneum, one of which ended fatally in twenty-four hours, the other after ten days. Unfortunately, no other particulars are given. This operation has been done twenty-seven times in Italy, four times with fatal ending; and in two cases there was complete restoration to health. The apparent benefit from this proceeding was in most cases not lasting; and the operation had to be repeated at definite intervals, which, as the earlier cases seemed to give rise to no dangerous symptoms, it was thought could be safely done. But the good results in the first cases were not maintained. It would appear from what follows that the intra-peritoneal injection was used to overcome the anæmia of chronic affections, for, looking to the lessening success of this method of treatment, Dozzi asked himself whether the introduction of similar quantities of blood into the intestinal canal might not be productive of less brilliant but more useful results. Four cases were experimented on. The first was a boy aged thirteen years, brought very low by pellagra; a litre and a half of blood was injected eight times in a fortnight, with complete restoration of health. The second instance was of much the same kind, and eleven enemata of blood were given. The third was the case of a woman aged forty years, suffering from splenic leukaemia; here twenty-eight injections were given in two months; the patient greatly improved, and the spleen was reduced in size. The last was also a case of leukaemia, in which thirty introductions of blood were performed, with slow but sure improvement, the spleen lessening in size, and finally the blood returning to its normal state. The blood, injected by an enema apparatus, was taken from sheep or oxen whilst being slaughtered; it was defibrinated, and kept warm, if necessary, in a water-bath, the quantity used varying from one litre and a half to two litres. The patient gradually became able to retain this large quantity. We are warned that too much pressure must not be used, lest the blood should get into the higher parts of the alimentary tract, where it would be rather digested than absorbed. In this country we know practically nothing of the intra-peritoneal method of injection, but we should have thought that the procedure could scarcely be regarded as beneficial, or even as harmless. Enemata of blood may be nutrient, but they cannot be called transfusions in the ordinary sense of the term, and we confess to a doubt whether blood can be simply absorbed, even from the large bowel; further, this method of treatment was practised on cases widely different from those of acute anæmia. If such modes of administering the blood of animals be of therapeutical value, they probably are not so by such direct means as Dozzi seems to suppose. Moreover, because diseases get well whilst a certain treatment is in progress, the success need not depend on that treatment. Lastly, the facts given are not sufficient to prevent some doubt of the accuracy of the diagnosis of splenic leukaemia in the above instances.—*Med. Times and Gaz.*, Jan. 20, 1883.

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## MEDICINE.

### *Rare Complications of Enteric Fever.*

Abscess in the liver, occurring in the course of typhoid fever, has been recorded once by Hudson, and pyæmic deposits have been noticed once each by Louis and Frerichs. Murchison has seen a yellowish substance in the liver,